Curtis Screw Company Inc.

New York Manufacturing Extension Partnership

Curtis Niagara, LLC Facility Consolidation

Client Profile:
Curtis Niagara, LLC (formerly known as Curtis Screw) is a manufacturer of screw machine products. The Buffalo, New York, company's primary market is OEM sales to the automotive industry, including Tier I manufacturers. Because of its automotive emphasis, Curtis Niagara is registered under TS 16949 (the current ISO 9001 standard for automotive) and ISO 14001 (environmental). Founded in 1905, the company employs about 320 people split between two manufacturing facilities in Buffalo with an additional 150 people employed at two modern facilities in North Carolina and Connecticut.

Situation:
Curtis Niagara's original headquarters facility was comprised of approximately 92,000 square feet on three different levels, which adversely affected both logistics and material flow. The company also owned a single-level facility of 150,000 square feet within an older industrial park complex. Although this site presented some improvements over the original site, there were still major issues in regard to production flow and logistical limitations, particularly for shipping and receiving activities. Curtis Niagara recognized that reducing inefficiencies related to multiple production facilities by consolidating operations at its two Buffalo facilities into one single state-of-the art facility could result in significant cost savings and productivity improvements.
Merely increasing productivity and reducing costs, however, were not the only considerations of the company's senior management. It was also important that the new facility offer the opportunity to provide Curtis Niagara's customers with increased production capabilities as well as additional value-added products and services. The company is also committed to environmental factors, particularly recycling. Finally, there was also a strong desire to provide the workforce with a cleaner, safer and brighter working environment.

Solution:
Curtis Niagara approached Insyte Consulting, formerly the Western New York Technology Development Center, a NIST MEP network affiliate and division of the New York Manufacturing Extension Partnership, regarding an analysis of alternatives for the consolidation of manufacturing activities into a single site. The alternatives were seen as consolidation within one of the existing local facilities, acquisition of an existing building or new construction. A joint team of Curtis Niagara and Insyte Consulting personnel was organized to evaluate the alternatives, determine an optimal solution and to subsequently plan and execute the consolidation.
The subsequent project to complete the consolidation was broken down into three primary phases. The first phase was to determine the best alternative of the choices identified above. This was addressed by value stream mapping the flows of the major product families, which represented about 80 percent of company sales. This activity included an analysis of product mix, both current and future, which helped determine the requirements for the consolidated facility. The information was used to help generate a basic, block diagram of what a new facility should be. This analysis quickly showed

that an expansion into plant two, while feasible, did not present the best long-term solution given projected business growth and overall company needs. A new facility, whether through acquisition or construction, was determined to be the preferred alternative. This initial phase also included the identification of key external parties, who would help facilitate the consolidation. These included economic development agencies, realtors, architects and various contractors. Through this activity a modern, single-level site of 150,000 square feet was found; this facility had formerly been the manufacturing plant for another automotive parts producer (non-competitor). This site also offered the additional benefits of being located in an empire zone. Empire zones are designated areas throughout the New York State that offer special incentives to encourage economic and community development, business investment and job creation where certified businesses located within the zone are eligible to receive significant tax credits and benefits.

The second phase expanded the detail of the initial block layout into the selected facility consisted of verifying various factors pertaining to the physical building, projected volumes by line and equipment needs/utilization. This information provided the basis for the development and evaluation of several specific layout alternatives, which eventually resulted in the final layout. Phase two also included the construction and remodeling plan required to convert this facility to meet the company's current and future needs. The initial construction activity was begun during the final part of this phase.

The third and final phase detailed all the elements of the plant set up, including the transfer of existing equipment as well as the acquisition and installation of new equipment into the remodeled site. The staged transfer of equipment began with plant 1 and transitioned into plant 2. Ancillary activities included the installation of improved material handling equipment, i.e. three new overhead cranes. In addition, the company installed a chip recycling system of over 1,600 lineal feet. This enabled them to eliminate manual handling of the chips, recycle the majority of their machining oil and dispose of 97 percent of the dry metal chips to a recycling center. This is particularly significant since well over 50 percent of raw material eventually becomes scrap.

The overall results have been dramatic in terms of increased productivity, cost reduction, additional business opportunities, environmental improvements and employee satisfaction. Productivity and throughput have increased based on significant improvement in machine utilization, upgrading of utilities and increased efficiencies of 12 percent. Material costs have been reduced due to enhanced inventory and storage practices (improved racking and supplier development). Material flow has improved through: elimination/reduction of handling and transportation, decreased congestion around docks and enhanced communication among associates. From a business development perspective, the new location facilitated landing a major project, a rack and pinion steering assembly for a key OEM automotive account. Finally as part of the move into the new facility, the company initiated a work place organization (5S) initiative that has effectively maintained appearance, functionality and safety within the operation. These changes, combined with the above, have also contributed to a 26 percent reduction in cost of quality.

Results:

* Increased productivity and throughput by 12 percent.
* Reduced cost of quality by 26 percent.
* Recycled 97 percent of dry metal chips and majority of machine oil.
* Reduced inventory costs.
* Improved material flow.
* Landed a major new project for key OEM automotive account.

* Maintained pre-consolidation levels of employment while providing all workers with a safer work environment.

Testimonial:
"Insyte Consulting cost-effectively provided thorough, professional analysis and project support for this very ambitious undertaking. With their involvement we were able to meet our cost targets and time lines with minimal disruption to our business."

Paul Hojnacki, President